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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,214	09/01/2000	James R. Kliegel	004210.P001	6134

7590

12/21/2004

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EXAMINER

DAY, HERNG DER

ART UNIT

PAPER NUMBER

2128

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/654,214

**Applicant(s)**

KLIEGEL, JAMES R.

**Examiner**

Herng-der Day

**Art Unit**

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This communication is in response to Applicant's Amendment ("Amendment") to Office Action dated January 29, 2004, mailed July 29, 2004, and received by PTO August 2, 2004.

1-1. Claims 1-18 have been cancelled. Claims 19-20 have been added. Claims 19-20 are pending.

1-2. Claims 19-20 have been examined and rejected.

### *Specification*

2. The disclosure is objected to because of the following informalities:

Appropriate correction is required.

2-1. It appears that "the turbulent flow fluctions", as described in lines 20-21 of page 8, should be "the turbulent flow fluctuations".

### *Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 19-20 are rejected under 35 U.S.C. 101 because the inventions as disclosed in claims are directed to non-statutory subject matter. Specifically, the claims are directed towards manipulation of an abstract idea (moment equations), without producing "useful, concrete, and tangible" results as required by *In re Alappat*, 33 F.3d 1524, 1544, 31 USPQ2d 1545, 1557 (Fed. Cir. 1994).

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4-1. Claim 19 recites steps deriving a set of closed time average turbulent moment equations.

The steps include “providing input to a general purpose computer defining a set of moment equations” and “instructing the general purpose computer to calculate ... equations closure relationships using ... closure relationships to yield a set of closed time average turbulent moment equations”. Applicant has recited steps that do nothing more than manipulate basic mathematical constructs, hence the claim is unpatentable. See *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir 1994).

Claim 20 is a computer readable storage medium claim. The medium containing a set of instructions for a general purpose computer, the set of instructions defining a method of deriving a set of closed time average turbulent moment equations. The method steps include “defining a set of moment equations” and “calculating ... equations closure relationships using ... closure relationships to yield a set of closed time average turbulent moment equations”. Applicant has recited steps that do nothing more than manipulate basic mathematical constructs, hence the claim is unpatentable. See *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir 1994).

Patentable subject matter is held to exclude “laws of nature, natural phenomena, and abstract ideas”. *Diamond v. Diehr*, 450 U.S. 175, 185, 101 S.Ct 1048, 1056 (1981). Applicant’s method claim starts with a step of manipulating an abstract idea (defining a set of moment equations) and proceeds to generate another abstract idea (to yield a set of closed time average turbulent moment equations). Only an Applicant’s claims are entitled to the protection of the patent system, therefore, claims, if expressing ideas in a mathematical form, must describe something beyond the manipulation of ideas in order to qualify as patentable subject matter. Given the absence of any practical effect or significant independent physical acts, Applicant’s

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claim fails to adequately define the claimed invention within the domain of patentable subject matter.

**4-2.** An additional limitation in the independent claims using the yielded moment equations for a “useful, concrete, and tangible” purpose would satisfy the requirements of 35 USC 101.

#### ***Allowable Subject Matter***

**5.** Claims 19-20 are not taught by the prior art, and would be allowable if the above rejection under 35 U.S.C. 101 is overcome.

#### ***Applicants' Arguments***

**6.** Applicant argues, “all claims were rejected under 35 U.S.C. § 101. Applicant has drafted new claims 19 and 20 with particular attention to the requirements of 35 U.S.C. § 101 as interpreted by recent case law” (Amendment, page 16, paragraph 4).

#### ***Response to Arguments***

**7.** Applicants' arguments have been fully considered but they are not persuasive. The newly added claims 19 and 20 are directed towards manipulation of an abstract idea (moment equations), without producing “useful, concrete, and tangible” results as required by *In re Alappat*, 33 F.3d 1524, 1544, 31 USPQ2d 1545, 1557 (Fed. Cir. 1994). Therefore, claims 19 and 20 are rejected under 35 U.S.C. § 101 as detailed in section 4-1 above.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Jean R. Homere can be reached on (571) 272-3780. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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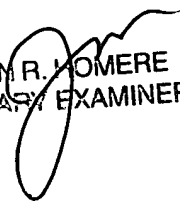
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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day *H.D.*  
December 14, 2004

  
JEAN R. HOMERE  
PRIMARY EXAMINER